

< TEST

Biology Chemistry Physics English

- 1) Pick up the diameter of a myofibril:
- A) 1 – 2 μm C) 16 – 18 μm
B) 7 – 8 μm D) 10 – 100 μm
- ☐ A ☐ B ☐ C ☐ D
- 2) Muscle is a specialized tissue of _____ origin:
- A) Ectodermal C) Endodermal
B) Mesodermal D) Epidermal
- ☐ A ☐ B ☐ C ☐ D
- 3) Sarcoplasmic reticulum stores _____ ions:
- A) Magnesium C) Potassium
B) Calcium D) Hydrogen
- ☐ A ☐ B ☐ C ☐ D
- 4) Where can we find Z-line in the fine structure of skeletal muscles myofibril?
- A) In the mid of A-band C) In the mid of H-zone
B) In I-band D) Along the I-band
- ☐ A ☐ B ☐ C ☐ D
- 5) These cells contain numerous filaments of special protein actin and myosin:
- A) Nerve cells C) Muscle cells
B) Gland cells D) Bone cells
- ☐ A ☐ B ☐ C ☐ D
- 6) Each light band is called:
- A) I band C) H zone
B) A band D) M line
- ☐ A ☐ B ☐ C ☐ D
- 7) Troponin binds to all of the following, EXCEPT:
- A) Ca^{+2} ion C) Tropomyosin
B) Actin D) Myosin
- ☐ A ☐ B ☐ C ☐ D
- 8) The sites where the motor nerve impulse is transmitted from the nerve endings to the skeletal muscle cell membranes are called:

- A) Z lines
- B) Sarcomeres
- C) Myofilaments
- D) Neuro muscular junctions

☐ A ☐ B ☐ C ☐ D

9) Which one of the following changes occur when skeletal muscle contracts?

- A) I-band shortens only
- B) A band shortens and Z-lines move further apart
- C) I-band shortens and Z-lines get closer
- D) Actin filament contracts

☐ A ☐ B ☐ C ☐ D

10) These muscles show alternate light and dark bands:

- A) Striated
- B) Smooth
- C) Cardiac
- D) Skeletal

☐ A ☐ B ☐ C ☐ D

11) Myofilament is made up of:

- A) Actin filament only
- B) Thick filament only
- C) Thin filament only
- D) Thick and thin filament both

☐ A ☐ B ☐ C ☐ D

12) Thin myofilaments consist of:

- A) Actin, Myosin, Troponin
- B) Actin, Tropomyosin, Troponin
- C) Actin, Tropomyosin, Hemoglobin
- D) Actin, Myoglobin, Troponin

☐ A ☐ B ☐ C ☐ D

13) Pick up the thickest part of muscle between origin and insertion:

- A) Tendon
- B) Myofilament
- C) Thick filament
- D) Belly

☐ A ☐ B ☐ C ☐ D

14) Pick up a muscle cell:

- A) Myofibril
- B) Muscle bundle
- C) Myofilament
- D) Muscle fiber

☐ A ☐ B ☐ C ☐ D

15) These muscles are striated and involuntary:

- A) Smooth
- B) Skeletal
- C) Cardiac
- D) Striated

☐ A ☐ B ☐ C ☐ D

16) The thick filament is about _____ in diameter:

- A) 7 nm
- B) 2 μ m
- C) 16 μ m
- D) 16 nm

☐ A ☐ B ☐ C ☐ D

17) Cross bridges are part of:

- A) Troponin
- B) Myosin
- C) Actin
- D) Tropononin

☐ A ☐ B ☐ C ☐ D

18) The thousands of T-tubules of each muscle cell are collectively called:

- A) Triad
- B) Sarco-tubules
- C) T-system
- D) Neuromuscular junction

☐ A ☐ B ☐ C ☐ D

19) Cytoplasm of the muscle fibre is known as:

- A) Axoplasm
- B) Protoplasm
- C) Sarcolemma
- D) Sarcoplasm

☐ A ☐ B ☐ C ☐ D

20) These muscles are found in the blood vessels, digestive tract and many other organs:

- A) Cardiac
- B) Smooth
- C) Striped
- D) Skeletal

☐ A ☐ B ☐ C ☐ D

21) When cross bridges contract they pull the thin actin filament towards the?

- A) Left side of the sarcomere
- B) Ends of the sarcomere
- C) Right side of the sarcomere
- D) Centre of the sarcomere

☐ A ☐ B ☐ C ☐ D

22) Thin filaments are 7-8 nm thick and are composed chiefly of _____ molecule:

- A) Myosin
- B) Actin
- C) Myoglobin
- D) Tropomyosin

☐ A ☐ B ☐ C ☐ D

23) The study of muscles is called:

- A) Mycology
- B) Myology
- C) Osteology
- D) Neurology

☐ A ☐ B ☐ C ☐ D

24) According to _____ theory, the actual length of actin myosin filament does not change but actin filament slide over myosin filament:

- A) Induce fit model
- B) Fluid mosaic model
- C) Lock and key model
- D) Sliding filament model

☐ A ☐ B ☐ C ☐ D

25) _____ muscles are long and spindle shape with each containing a single muscles:

- A) Striated
- B) Smooth
- C) Cardiac
- D) Skeletal

☐ A ☐ B ☐ C ☐ D

26) Myofibrils within the muscle fibers contain thick and thin filaments made up of _____ and _____ respectively:

- A) Myosin and actin
- B) Globulin and albumin
- C) Troponin and tropomyosin
- D) Fibrin and fibrinogen

☐ A ☐ B ☐ C ☐ D

27) The example of molecular relation between all living beings is a common:

- A) Skeletal framework C) Genetic code
B) Mode of locomotion D) Tissue types

☐ A ☐ B ☐ C ☐ D

28) The oldest known fossils are:

- A) Plants C) Prokaryotes
B) Animals D) Vertebrates

☐ A ☐ B ☐ C ☐ D

29) It is a major source of variation:

- A) Mutation C) Selection
B) Gene flow D) Non-random mating

☐ A ☐ B ☐ C ☐ D

30) The first comprehensive model that attempted to explain how life evolved was:

- A) Theory of natural selection
B) Theory of special creation
C) Theory of inheritance of acquired characters
D) Hardy – Weinberg theorem

☐ A ☐ B ☐ C ☐ D

31) According to concept of hereditary the modifications an organism acquires during its lifetime can be passed along to its offspring:

- A) Lamarck C) Linnaeus
B) Darwin D) Malthus

☐ A ☐ B ☐ C ☐ D

32) Which one of the following is considered as advance evidence of evolution?

- A) Embryology record C) Biochemical record
B) Molecular record D) Fossil record

☐ A ☐ B ☐ C ☐ D

33) According to Darwinism, the major force behind speciation is:

- A) Mutations C) Natural selection
B) Genetic drift D) Migration

☐ A ☐ B ☐ C ☐ D

34) Wings of birds, wings of butterfly and that of flying lizard have:

- A) Same structures and same functions
B) Same structures and different functions
C) Different structures and same functions
D) Different structures and different functions

☐ A ☐ B ☐ C ☐ D

35) Which one of the following is the correct group of vestigial organs in man?

- A) Nictitating membrane of eye, appendix, coccyx and mammary glands of male
B) Eyelids, appendix, coccyx and mammary glands of male

- C) Nictitating membrane of eye, appendix, coccyx and elbow joint
D) Nictitating membrane of eye, appendix, wisdom tooth and mammary glands of male

☐ A ☐ B ☐ C ☐ D

36) Which one of the following scientist's name is correctly match with the theory put forth by him?

- A) George Cuvier : Inheritance of acquired characteristics
B) Charles Darwin : Origin of species by natural selection
C) Jean Baptiste de Lamarck : Catastrophes
D) De Varies : Natural selection

☐ A ☐ B ☐ C ☐ D

37) These are the remains of species that are ancestral to modern species:

- A) Vestigial organs C) Analogous organs
B) Homologous organs D) Fossils

☐ A ☐ B ☐ C ☐ D

38) Which one of the following pairs represent analogous features?

- A) Mammal forelimb and bird wing
B) Reptilian heart and mammalian heart
C) Insect wings and bat wings
D) Elephant tusks and human incisors

☐ A ☐ B ☐ C ☐ D

39) Homologous structures are a result of:

- A) Shared ancestry C) Divergent evolution
B) Stabilising selection D) Convergent evolution

☐ A ☐ B ☐ C ☐ D

40) An important evidence in favour of organic evolution is the occurrence of:

- A) Homologous and analogous organs
B) Homologous and vestigial organs
C) Analogous and vestigial organs
D) Homologous organs only

☐ A ☐ B ☐ C ☐ D

41) Which evidence of evolution is related to Darwin's finches?

- A) Evidences from biogeographical distribution
B) Evidences from comparative anatomy
C) Evidences from embryology
D) Evidences from paleontology

☐ A ☐ B ☐ C ☐ D

42) Theory of Natural Selection dwells on:

- A) Role of environment in evolution
B) Natural selection acting on favourable variations
C) Changes in gene complex resulting in heritable variations
D) None of the above

☐ A ☐ B ☐ C ☐ D

Theory of inheritance of acquired characters was

- 43) given by:
A) Wallace C) Lamarck
B) Darwin D) De Vries
- ☐ A ☐ B ☐ C ☐ D
- 44) The supporters of special creation are called _____, while the supporters of evolution are called _____:
A) Evolutionists, creationists
B) Creationists, evolutionists
C) Archeologists, evolutionists
D) Creationists, aracheologist
- ☐ A ☐ B ☐ C ☐ D
- 45) Loss of limbs in snakes is the result of crawling and concealing habit and it is an example of:
A) Mutation
B) Use of organs
C) Disuse of organs
D) Behavioral modification
- ☐ A ☐ B ☐ C ☐ D
- 46) Endosymbiont hypothesis explains the origin of:
A) Prokaryotes C) Armadilo
B) Eukaryotes D) Frog
- ☐ A ☐ B ☐ C ☐ D
- 47) The theory of use and disuse was given by:
A) Aristotle C) Lamarck
B) Darwin D) Mendel
- ☐ A ☐ B ☐ C ☐ D
- 48) Similarity in characteristically resulting from common ancestry is known as:
A) Analogy
B) Phylology
C) Homology
D) Evolutionary relationship
- ☐ A ☐ B ☐ C ☐ D
- 49) Neo-Darwinism is based upon ideas from, EXCEPT:
A) Biogeography C) Taxonomy
B) Palaentology D) Molecular biology
- ☐ A ☐ B ☐ C ☐ D
- 50) Which one of the following describes correctly the homologous structures?
A) Organs with anatomical similarities, but performing different functions
B) Organs with anatomical dissimilarities, but performing same function
C) Organs that have no function now, but had an important function in ancestor
D) Organs appearing only in embryonic stage and disappearing later in the adult
- ☐ A ☐ B ☐ C ☐ D

< TEST

Biology **Chemistry** Physics English

51) Neopentyl alcohol is a type of alcohol:

- A) Primary alcohol C) Tertiary alcohol
B) Secondary alcohol D) Aromatic alcohol

☐ A ☐ B ☐ C ☐ D

52) Which of the following statements does not match correctly?

Opt.	Reagent / State	Ethanol	Phenol
A)	State at room temperature	Liquid	Solid
B)	Organic acid (CH ₃ COOH)	Ethyl ethanoate (an ester) is formed	No reaction
C)	Br ₂ , H ₂ O	No reaction	White ppt.
D)	Conc. H ₂ SO ₄	Dehydration → only ether is formed	No reaction

☐ A ☐ B ☐ C ☐ D

53) Which of these molecular formulas represent the first three members of the alcohol family?

- A) C₂H₅OH, C₃H₇OH, C₄H₉OH
B) CH₃OH, C₂H₅OH, C₃H₇OH
C) C₂H₄OH, C₂H₆OH, C₃H₈OH
D) HOH, CH₃OH, C₂H₅OH

☐ A ☐ B ☐ C ☐ D

54) Which of these equations correctly represents the fermentation of glucose?

- A) C₆H₁₂O₆ (aq) → C₂H₅OH (aq) + 2CO₂ (g)
B) C₆H₁₂O₆ (aq) → 2C₂H₅OH (aq) + 4CO₂ (g)
C) C₆H₁₂O₆ (aq) → 2C₂H₅OH (aq) + 2CO₂ (g)
D) C₆H₁₂O₆ (aq) → C₂H₅OH (aq) + 4CO₂ (g)

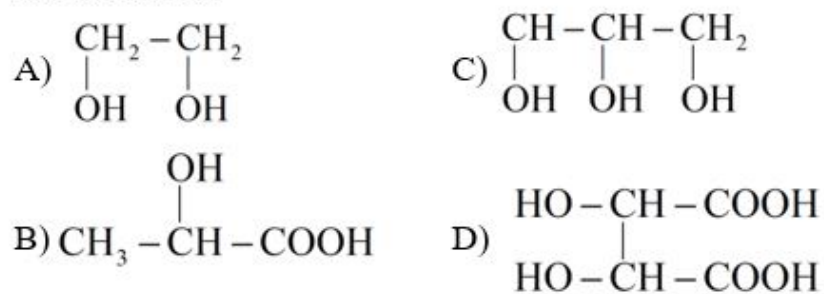
☐ A ☐ B ☐ C ☐ D

55) Identify the incorrect statement about phenol.

- A) It is colourless crystalline hygroscopic solid
B) It is poisonous in nature
C) It is used as a disinfectant in hospitals and washrooms
D) It is sparingly soluble in water

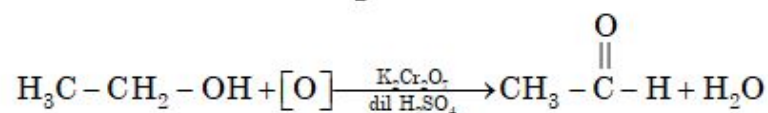
☐ A ☐ B ☐ C ☐ D

56) Which one of the following is the structure of tartaric acid?



☐ A ☐ B ☐ C ☐ D

57) Consider the following reaction of alcohol:



In the above reaction ethanol can act as:

- A) Reducing agent only C) Both A and B
B) Oxidizing agent only D) Neither A nor B

☐ A ☐ B ☐ C ☐ D

58) Which of the following reagents produces picric acid by the reaction with phenol?

- A) Br₂ / water C) Conc. HNO₃
B) dil. HNO₃ D) CH₃ - Cl

☐ A ☐ B ☐ C ☐ D

59) Which of the following type of reactions is shown by phenol?

- A) Reaction due to -OH group only
B) Reaction due to benzene ring only
C) Both A and B
D) Neither A nor B

☐ A ☐ B ☐ C ☐ D

60) The relative strength of phenol, water, ethanol and carboxylic acid has the following order of increasing acid strength:

- A) Carboxylic Acid > Phenol > Ethanol > Water
B) Carboxylic Acid > Phenol > Water > Ethanol
C) Phenol > Carboxylic Acid > Ethanol > Water
D) Water > Ethanol > Phenol > Carboxylic Acid

☐ A ☐ B ☐ C ☐ D

61) Which of the following mechanism of reaction is shown by alcohol when C-O bond is broken?

- A) Electrophilic substitution reaction
B) Nucleophilic substitution reaction
C) Acid base reaction
D) Redox reaction

☐ A ☐ B ☐ C ☐ D

62) A compound "X" has molecular formula C₄H₁₀O, and is unreactive towards acidified K₂Cr₂O₇ and its elimination takes place:

- A) CH₃-CH₂-CH₂-CH₂-OH
B) (CH₃)₂-CH-CH₂-OH
C) CH₃-CH₂-CH(OH)-CH₃
D) (CH₃)₃COH

☐ A ☐ B ☐ C ☐ D

63) General formula of alcohol is:

- A) C_nH_{2n}O C) C_nH_{2n+1}O
B) C_nH_{2n+2}O D) C_nH_{n-2}O

☐ A ☐ B ☐ C ☐ D

64) Methanol and ethanol are soluble in water due to:

- A) Their acidic character C) Hydrogen bonding
B) Dissociation in water D) Alkyl group

☐ A ☐ B ☐ C ☐ D

65) Which of the following is the most reactive alcohol when bond is to be broken between carbon and oxygen?

- A) $\text{CH}_3\text{-OH}$ C) R_2CHOH
B) $\text{R-CH}_2\text{-OH}$ D) R_3COH

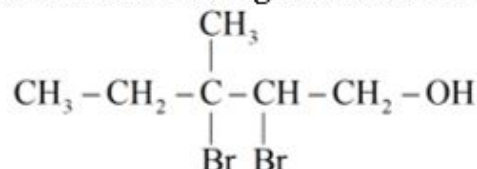
☐ A ☐ B ☐ C ☐ D

66) Bakelite is first synthetic plastic and it is prepared by the reaction of following two monomers:

- A) Propanone and benzyle alcohol
B) Methanal and phenol
C) Ethanal and phenol
D) Methanol and phenol

☐ A ☐ B ☐ C ☐ D

67) Consider the following structure of halo-alkane:



The correct name of above structure according to IUPAC is:

- A) 2,3-Dibromo-3-methylpentan-1-ol
B) 3,4-Dibromo-2-methylpentan-1-ol
C) 3,4-Dibromo 1-1-ol-3-methylpentane
D) 3-Methyl-2,3-dibromo-2-olpentan

☐ A ☐ B ☐ C ☐ D

68) Sodium phenoxide on treating with hydrochloric acid yields?

- A) Benzene C) Phenol
B) Benzoic acid D) Benzaldehyde

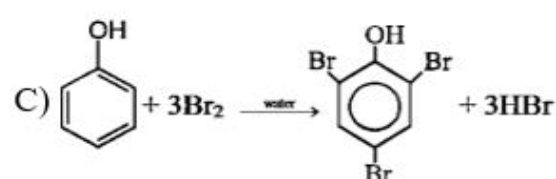
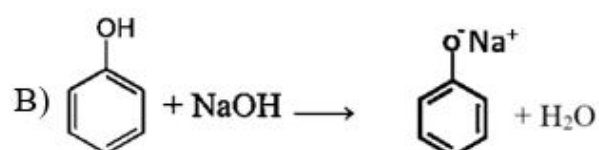
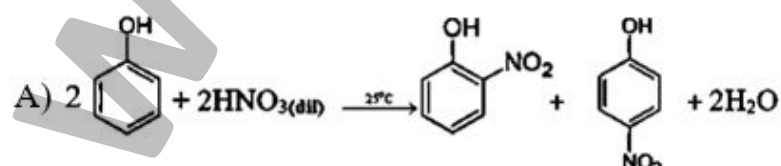
☐ A ☐ B ☐ C ☐ D

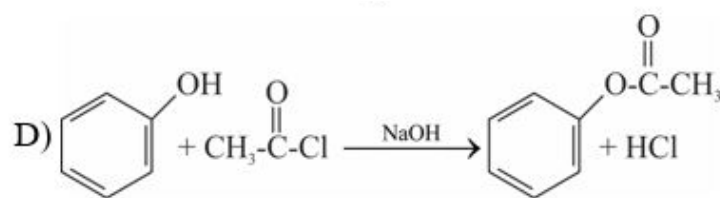
69) The acidity of phenol is due to its _____:

- A) Nature of benzene
B) Double bond in benzene ring
C) Nature of phenoxide
D) Hydroxal group

☐ A ☐ B ☐ C ☐ D

70) In which of the following reactions of phenol, an ester is formed?





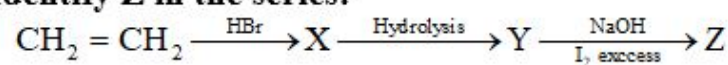
☐ A ☐ B ☐ C ☐ D

71) Which compound is called universal solvent?

- A) H_2O C) CH_3OH
B) $\text{C}_2\text{H}_5\text{OH}$ D) $\text{CH}_3\text{-O-CH}_3$

☐ A ☐ B ☐ C ☐ D

72) Identify Z in the series:



- A) $\text{C}_2\text{H}_5\text{I}$ C) $\text{C}_2\text{H}_5\text{OH}$
B) CHI_3 D) CH_3CHO

☐ A ☐ B ☐ C ☐ D

73) In which of the following reaction methyl alcohol is formed:

- A) $\text{CH}_3\text{OC}_2\text{H}_5 + \text{HI}$ C) Both A and B
B) $\text{CH}_3\text{CH}_2\text{OH} + \text{HI}$ D) Neither A nor B

☐ A ☐ B ☐ C ☐ D

74) When alcohols react with Na metal, the alkoxide ion thus formed is strong?

- A) Electrophile C) Acid
B) Nucleophile D) None of these

☐ A ☐ B ☐ C ☐ D

75) The removal of molecule in a reaction is termed as:

- A) Hydrolysis C) Hydrogenation
B) Dehydration D) Halogenation

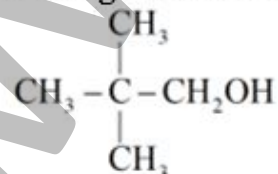
☐ A ☐ B ☐ C ☐ D

76) Sometimes, Brazilians used fuel for their vehicles instead of petrol, the fuel they used is:

- A) Ethanol C) Alcohol
B) Gasoline D) Propanol

☐ A ☐ B ☐ C ☐ D

77) Consider the following structure of alcohol:



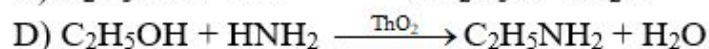
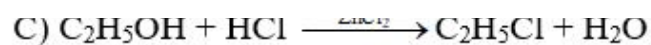
The correct name of the given structure of alcohol according to IUPAC name is:

- A) 2,2-Dimethyl-1-propanol
B) 2,2-Dimethyl-3-propanol
C) 1,1-Dimethyl-2-propanol
D) 3,3-Dimethyl-1-propanol

☐ A ☐ B ☐ C ☐ D

78) In which of the following reaction O-H bond breaks?

- A) $2\text{C}_2\text{H}_5\text{OH} + 2\text{Na} \longrightarrow 2\text{C}_2\text{H}_5\text{O}^-\text{Na}^+ + \text{H}_2$
B) $\text{C}_2\text{H}_5\text{OH} + \text{SOCl}_2 \xrightarrow{\text{Pyridine}} \text{C}_2\text{H}_5\text{Cl} + \text{SO}_2 + \text{HCl}$



- ☐ A ☐ B ☐ C ☐ D

79) Ethanol is prepared on industrial scale world over, by the process of fermentation. Fermentation is a biological process which occurs in the presence of certain enzymes secreted by microorganisms such as yeast. Which one of the following statement is incorrect for essential conditions for fermentation?

- A) Optimum temperature (25 to 30°C)
B) In the presence of a preservative
C) Proper aeration
D) Dilution of solution

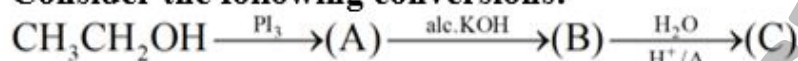
- ☐ A ☐ B ☐ C ☐ D

80) Which of the following is the correct order of decreasing basic character?

- A) $\text{CH}_3\text{CH}_2\text{O}^- > \text{CH}_3\text{O}^- > \text{OH}^-$
B) $\text{OH}^- > \text{CH}_3\text{O}^- > \text{CH}_3\text{CH}_2\text{O}^-$
C) $\text{CH}_3\text{O}^- > \text{OH}^- > \text{CH}_3\text{CH}_2\text{O}^-$
D) $\text{CH}_3\text{CH}_2\text{O}^- > \text{OH}^- > \text{CH}_3\text{O}^-$

- ☐ A ☐ B ☐ C ☐ D

81) Consider the following conversions:



Which of the above compounds represent A, B, C respectively in the conversions?

- A) Iodoethane, ethene, ethanol
B) Ethene, ethanol, iodoethane
C) Ethanol, iodoethane, ethene
D) Iodoethane, ethanol, ethene

- ☐ A ☐ B ☐ C ☐ D

82) The IUPAC name of an unsymmetrical ether with the molecular formula $\text{C}_4\text{H}_{10}\text{O}$ is:

- A) Ethoxypropane
B) Methoxypropane
C) Ethoxyethane
D) Methoxyethane

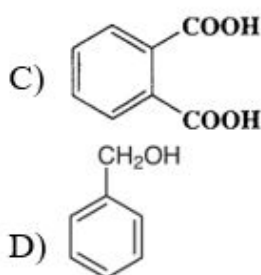
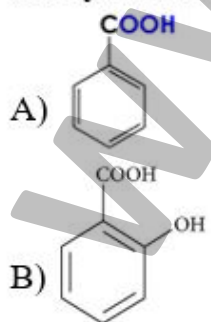
- ☐ A ☐ B ☐ C ☐ D

83) Williamson's synthesis is used to prepare:

- A) Acetone
B) Ether
C) PVC
D) Bakelite

- ☐ A ☐ B ☐ C ☐ D

84) Which one of the following is the structure of benzyl alcohol?



- ☐ A ☐ B ☐ C ☐ D

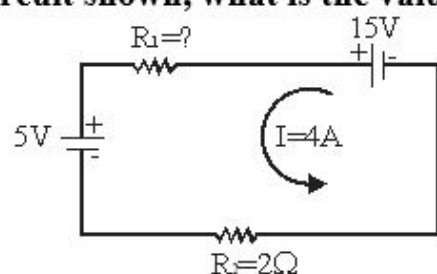
85) Which of the following is correct order of acidic strength of different types of alcohols?

- A) $3^\circ > 2^\circ > 1^\circ$
B) $1^\circ > 2^\circ > 3^\circ$
C) $2^\circ > 1^\circ > 3^\circ$
D) $3^\circ > 1^\circ > 2^\circ$

< TEST

Biology Chemistry **Physics** English

- 86) In the circuit shown, what is the value of R_1 ?



- A) $0.25\ \Omega$ C) $1.5\ \Omega$
 B) $0.5\ \Omega$ D) $2.5\ \Omega$

☐ A ☐ B ☐ C ☐ D

- 87) Two electric bulbs have tungsten filament of same length. If one of them gives 50 watt and other 25 watt, then:

- A) 50 watt bulb has thinner filament.
 B) 25 watt bulb has thinner filament.
 C) Both filaments are of same thickness
 D) None of these

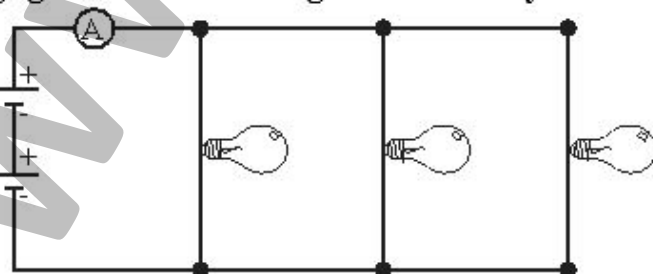
☐ A ☐ B ☐ C ☐ D

- 88) If R_1 and R_2 are respectively the filament resistances of a 25 W bulb and 100 W bulb, designed to operate on the same voltage, then:

- A) $R_1 = 4R_2$ C) $R_2 = 8R_1$
 B) $R_2 = 4R_1$ D) $R_1 = 8R_2$

☐ A ☐ B ☐ C ☐ D

- 89) Three similar light bulbs are connected to a constant voltage D.C supply as shown in the diagram. Each bulb operates at normal brightness and an ammeter of negligible resistance registers a steady current.



If we add forth identical bulb in parallel with these three bulbs, What happens to the ammeter reading and the brightness of the remaining bulbs?

- A) Ammeter reading increases, bulb brightness increases
 B) Ammeter reading increases, bulb brightness remains unchanged
 C) Ammeter reading remains unchanged, bulb brightness remains unchanged

D) Ammeter reading decreases, bulb brightness remains unchanged

- ☐ A ☐ B ☐ C ☐ D

- 90) A battery of emf 20 V and internal resistance r is connected across external resistance R . What is the observed potential difference across the terminals of the battery when external resistance R is made equal to internal resistance r :

A) 20 V C) 15 V
B) 10 V D) 5 V

- ☐ A ☐ B ☐ C ☐ D

- 91) The potential difference between the terminals of a cell in open circuit is 2.2 volt. With resistance of 5 ohm across the terminals of a cell, the terminal potential difference is 1.8 volt. The internal resistance of the cell is:

A) $\frac{9}{10} \text{ ohm}$ C) $\frac{10}{9} \text{ ohm}$
B) $\frac{7}{12} \text{ ohm}$ D) $\frac{12}{7} \text{ ohm}$

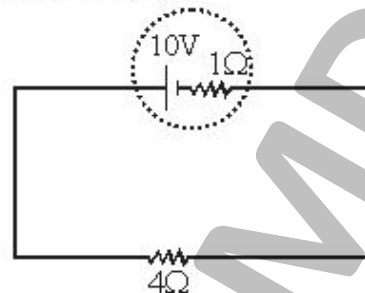
- ☐ A ☐ B ☐ C ☐ D

- 92) The current flowing through a resistor " R " when connected across a cell of emf " E " and internal resistance " r " is expressed as:

A) $\frac{E - V}{R}$ C) $\frac{E}{r + R}$
B) $\frac{E - V}{r}$ D) $\frac{E}{R - r}$

- ☐ A ☐ B ☐ C ☐ D

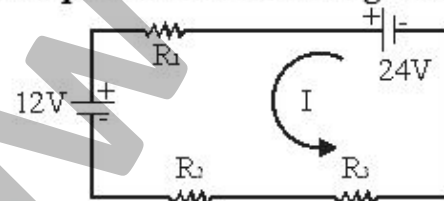
- 93) In the circuit shown, the rate of energy dissipation in the external resistor is:



A) 2 W C) 16 W
B) 4 W D) 8 W

- ☐ A ☐ B ☐ C ☐ D

- 94) The KVL equation for following circuit is:



A) $24 - IR_1 + 12 - IR_2 - IR_3 = 0$
B) $-24 + IR_1 + 12 - IR_2 + IR_3 = 0$
C) $24 - IR_1 + 12 - IR_2 + IR_3 = 0$
D) $12 - IR_1 - IR_2 - IR_3 = 0$

- ☐ A ☐ B ☐ C ☐ D

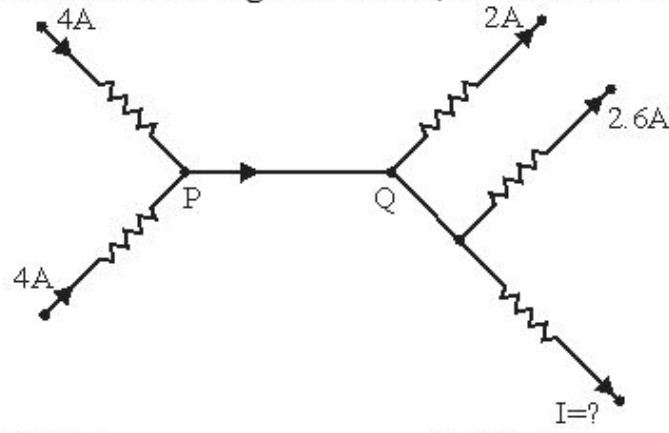
- 95) "If a source of emf is traversed from negative to positive terminal, the potential change is positive, it is negative in opposite direction", is a statement of:

A) Kirchhoff's current law

- B) Kirchhoff's voltage law
 C) Kirchhoff's mesh rule
 D) Rule for finding potential change

☐ A ☐ B ☐ C ☐ D

96) In the circuit diagram shown, the current "I" will be:



- A) 3.4 A
 B) 1.7 A
 C) 2.3 A
 D) 3.7 A

☐ A ☐ B ☐ C ☐ D

97) When three identical bulbs of 60 W, 200 V rating are connected in series to a 200 V supply, the power drawn by them will be:

- A) 60 W
 B) 180 W
 C) 10 W
 D) 20 W

☐ A ☐ B ☐ C ☐ D

98) Two 220 V, 100 W bulbs are first connected in series then in parallel. Each time the combination is connected to 220 V supply. The power drawn by the combination in each case respectively will be:

- A) 200 W, 160 W
 B) 50 W, 100 W
 C) 50 W, 200 W
 D) 100 W, 50 W

☐ A ☐ B ☐ C ☐ D

99) Four equal resistors when connected in series dissipate 5 W power. If they are connected in parallel, the power dissipated will be:

- A) 20 W
 B) 40 W
 C) 60 W
 D) 80 W

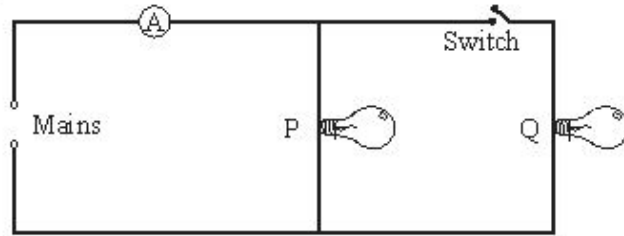
☐ A ☐ B ☐ C ☐ D

100) The resistor of resistance R is connected to 25 V supply, rate of heat produced in it is 25 J s^{-1} . The value of R is:

- A) 225Ω
 B) 25Ω
 C) 50Ω
 D) 125Ω

☐ A ☐ B ☐ C ☐ D

- 101) How will the reading in the ammeter A of the figure beneath be affected if bulb Q is disconnected from the circuit shown (consider both bulbs to be identical). The voltage in the mains is maintained at a constant value:



- A) The reading will be reduced to one-half
 B) The reading will not be affected
 C) The reading will be double of previous one
 D) The reading will be increased four fold

☐ A ☐ B ☐ C ☐ D

- 102) Two bulbs one of 35 W, 220 V and other of 70 W, 220 V are connected in parallel across the mains of 220 V.

The current:

- A) In 35 W bulb is lesser
 B) In 70 W bulb is lesser
 C) Is same in both bulbs
 D) None of these

☐ A ☐ B ☐ C ☐ D

- 103) The terminal potential difference of a cell when open circuited is (where "E" is emf of cell):

- A) E
 B) $\frac{E}{2}$
 C) Zero
 D) $\frac{E}{3}$

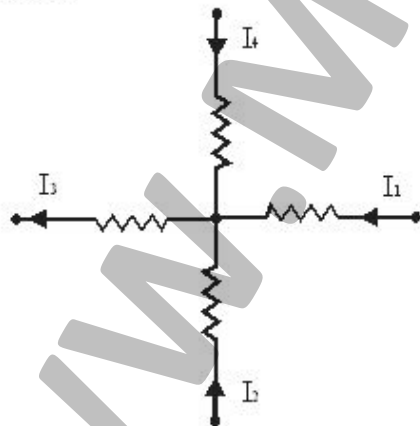
☐ A ☐ B ☐ C ☐ D

- 104) The emf of a cell is 6.0 V. When it is short circuited, the current of 3 A flows. The internal resistance of cell is:

- A) 0.25Ω
 B) 0.50Ω
 C) 2.0Ω
 D) 1.0Ω

☐ A ☐ B ☐ C ☐ D

- 105) Which of following is correct expression for figure shown below?



- A) $I_1 + I_2 - I_3 - I_4 = 0$
 B) $I_1 - I_3 - I_2 + I_4 = 0$
 C) $I_1 + I_2 = I_4 + I_3$
 D) $I_1 + I_2 = I_3 - I_4$

☐ A ☐ B ☐ C ☐ D

- 106) "The sum of all the currents meeting at a point in the circuit is zero", is a statement of:

- A) KCL
 B) KVL
 C) Ohm's law
 D) Wheatstone Bridge

☐ A ☐ B ☐ C ☐ D

- 107) Of the two bulbs in a house, one glows brighter than the other. Which of the two has larger resistance?

- A) Bright bulb
 B) Dim bulb

- B) Dim bulb
C) Both have same resistance
D) Brightness does not depend on resistance

☐ A ☐ B ☐ C ☐ D

108) In the presence of internal resistance of the source, which one of the following relations between potential difference (V) and e.m.f. (E) is correct? (when source is giving current to external resistance)

- A) $E = 0$ C) $E > V$
B) $E = V$ D) $E < V$

☐ A ☐ B ☐ C ☐ D

109) Kirchhoff's 2nd law is based upon law of conservation of:

- A) Current C) Voltage
B) Charge D) Energy

☐ A ☐ B ☐ C ☐ D

110) The electrical device which is being used to compare the e.m.f. of two cells is known as:

- A) Rheostat C) Potentiometer
B) Wheatstone bridge D) Galvanometer

☐ A ☐ B ☐ C ☐ D

111) A heating coil has a resistance of $20\ \Omega$. It is designed to operate on 220 V. What electric energy in joules is supplied to heater in 10 s?

- A) 2420 J C) 242000 J
B) 24.2 kJ D) 2.4 MJ

☐ A ☐ B ☐ C ☐ D

112) When the power transfer to the load is maximum then the efficiency is:

- A) 100% C) 25%
B) 50% D) 75%

☐ A ☐ B ☐ C ☐ D

113) Circuits where simplification by series and parallel combinations is impossible, we use:

- A) Ohm's law C) Ampere's law
B) Faraday's law D) Kirchhoff's rules

☐ A ☐ B ☐ C ☐ D

114) Four wires meet at a junction. The first carries 4 A in to the junction, the second carries 5 A out of the junction, and third carries 2 A out of the junction. The fourth carries:

- A) 7 A out junction C) 3 A out of junction
B) 7 A into junction D) 3 A into the junction

☐ A ☐ B ☐ C ☐ D

115) Potentiometer is the instrument works on the principle of:

- A) Kirchhoff's 1st rule
B) Wheatstone bridge
C) Combination of resistance
D) Kirchhoff's 2nd rule

☐ A ☐ B ☐ C ☐ D

< TEST

Biology Chemistry Physics **English**

- 116)** Directions: Fill in the blank with appropriate option.

We are now urgently appealing _____ information about the identity of the suspects and the whereabouts of the car.

- A) To C) In
B) For D) About

☐ A ☐ B ☐ C ☐ D

- 117)** He showed that when germs enter _____ the body they are immediately attacked by hosts of white cells from the whole neighborhood.

- A) In C) Into
B) to D) None of these

☐ A ☐ B ☐ C ☐ D

- 118)** I always have a great time _____ the summer, because school is out and it's nice outside.

- A) At C) For
B) on D) In

☐ A ☐ B ☐ C ☐ D

- 119)** You have to leave your shoes _____ the door when you enter the house.

- A) In C) Over
B) To D) At

☐ A ☐ B ☐ C ☐ D

- 120)** For people trying to lose weight, having herbal tea _____ dessert.

- A) After dinner is a good substitution to
B) Behind dinner is a good substitution with
C) After dinner is a good substitution for
D) After dinner are a good substitution with

☐ A ☐ B ☐ C ☐ D

121) Now that I have researched all of the candidates and the issues, I have decided to support _____ the third-party candidate.

- A) For
B) By
C) To
D) None of these

☐ A ☐ B ☐ C ☐ D

122) The pines on top of the mountain _____ us looked as if the fingers of their long boughs were fondling the substance of a white cloud.

- A) Over
B) On
C) At
D) Above

☐ A ☐ B ☐ C ☐ D

123) I am accusing him of having a miniscule mind based on the fact that he is apparently so enraptured by his own ideology that he is blind _____ its faults.

- A) In
B) Of
C) To
D) For

☐ A ☐ B ☐ C ☐ D

124) The last time we discussed the matter was _____ the 13th of May last year.

- A) On
B) In
C) At
D) For

☐ A ☐ B ☐ C ☐ D

125) The residents of the complex are parting _____ a hefty sum every month for the Maintenance of the garden.

- A) From
B) To
C) With
D) Away

☐ A ☐ B ☐ C ☐ D

126) Direction: Pick the correct option.

- A) It snows here every year at December, so we always go outside and play in the snow on Christmas day.
B) It snows here every year in December, so we always go outside and play in the snow on Christmas day.
C) It snows here every year in December, so we always go outside and play in the snow at Christmas day.
D) It snows here every year in December, so we always go outside and play in the snow on Christmas.

☐ A ☐ B ☐ C ☐ D

127) A) During his journey towards the desert, he was killed with a highway man by a dagger.
B) During his journey to the desert, he was killed a highway man for a dagger.
C) During his journey towards the desert, he was killed by a highway man with a dagger.
D) During his journey towards the desert, he was killed by a highway man to a dagger.

☐ A ☐ B ☐ C ☐ D

128) A) I remember I was pretty annoyed to my brother upon some trivial disagreement.
B) I remember I was pretty annoyed from my brother on some trivial disagreement.
C) I remember I was pretty annoyed at my brother on some trivial disagreement.
D) I remember I was pretty annoyed with my brother at some trivial disagreement.

☐ A ☐ B ☐ C ☐ D

129) A) The two businessmen have been dealing with each other for years, so they know how to strike an agreement

- strike an agreement.
- B) The two businessmen have been dealing in each other for years, so they know how to strike an agreement.
- C) The two businessmen have been dealing with each other since years, so they know how to strike an agreement.
- D) The two businessmen have been dealing with each other for years, so they know how strike an agreement.

☐ A ☐ B ☐ C ☐ D

- 130) A) Because the artist never embossed his signature above the painting, there is no way to prove it is real.
- B) Because the artist never embossed his signature at the painting, there is not way to prove it is real.
- C) Because the artist never embossed his signature over the painting, there is no way to prove it is real.
- D) Because the artist never embossed his signature on the painting, there is no way to prove it is real.

☐ A ☐ B ☐ C ☐ D

- 131) A) She pulled it through: "Mr. Steward will call off you on 8.00 P.M."
- B) She pulled it on: "Mr. Steward will call for you at 8.00 P.M."
- C) She pulled it off: "Mr. Steward will call on you at 8.00 P.M."
- D) She pulled it over: "Mr. Steward will call after you at 8.00 P.M."

☐ A ☐ B ☐ C ☐ D

- 132) A) He wrote very neatly in blue ink in the occasion of calligraphy competition.
- B) He wrote very neatly in blue ink at the occasion of calligraphy competition.
- C) He wrote very neatly in blue ink on the occasion of calligraphy competition.
- D) He wrote very neatly with blue ink on the occasion of calligraphy competition.

☐ A ☐ B ☐ C ☐ D

- 133) A) I made an apology for my misbehavior when I argued against you after I was incapable from abiding to your rules prohibiting me from smoking.
- B) I made an apology for my misbehavior when I argued to you after I was incapable off abiding by your rules prohibiting me about smoking.
- C) I made an apology for my misbehavior when I argued with you after I was incapable of abiding by your rules prohibiting me from smoking.
- D) I made an apology for my misbehavior when I argued over you after I was incapable to abide by your rules prohibiting me in smoking.

☐ A ☐ B ☐ C ☐ D

- 134) A) The plates were kept covered, but to examine them under a micro-scope he had to take the covers apart.
- B) The plates were kept covered, but to examine them under a micro-scope he had to take the covers down.
- C) The plates were kept covered, but to examine them under a micro-scope he had to take the covers off.
- D) The plates were kept covered, but to examine them under a micro-scope he had to take the covers over.

☐ A ☐ B ☐ C ☐ D

- 135) A) Chips had put to Brookfield after a year in Melbury.
- B) Chips had put in for Brookfield behind a year at Melbury.
- C) Chips had put in for Brookfield after a year at Melbury.
- D) Chips had put after Brookfield after a year at Melbury.

☐ A ☐ B ☐ C ☐ D